REMARKS

The Examiner objected to the abstract, because the abstract contains "are disclosed " in lines 2 and 4. In response, Applicants have amended the abstract to delete "are disclosed " in lines 2 and 4.

The Examiner objected to the specification, alleging that "[t]he use of the trademark LINUX and UNIX has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology." In response, Applicants have amended the specification to capitalize LINUX and UNIX accompanied by the trademark ® symbol.

The Examiner objected to claims 3, 5, 12, 13, 15, 22, 23, 25, 32, 33, 40, 46 and 47.

The Examiner rejected claims 2-5, 22-25, 32, 33, 39, 40, 46 and 48 under 35 U.S.C. § 112, second paragraph.

The Examiner rejected claims 1-7, 11-17, 21-27, 31-34, 37-41 and 45-48 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Even et al. (US Patent 5,611,043).

The Examiner rejected claims 8-10, 18-20, 28-30, 35-36, 42-44 and 49-51 under 35 U.S.C. § 103(a) as being unpatentable over Even et al. (US Patent 5,611,043) in view of Jenevein et al. (US Patent 6,615,365).

Applicants respectfully traverse the claim objections, § 112 and § 103 rejections with the following arguments.

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Claim Objections

The Examiner objected to claims 3, 5, 12, 13, 15, 22, 23, 25, 32, 33, 40, 46 and 47 because "readpage" allegedly needs to be changed to "reading page" or "read page."

In response, Applicants respectfully contend that the word "readpage" is used in claims 3, 5, 12, 13, 15, 22, 23, 25, 32, 33, 40, 46 and 47 as an adjective for "process". The use of the phrase "readpage process" makes perfectly good sense as it appears in, *inter alia*, claim 2; i.e., "a readpage process for reading said page into memory". The term "readpage" appears extensively in the specification and its meaning is perfectly clear. The specification also refers to the "readpage function in Linux". As to the word "readpage", Applicants point out that Applicants can be their own lexicographer, so long as the meaning of the terms used in the specification is clear.

Applicants also note that the Examiner did provide a reason for the Examiner's objection to "readpage".

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35 U.S.C. §112, Second Paragraph

The Examiner rejected claims 2-5, 22-25, 32, 33, 39, 40, 46 and 48 under 35 U.S.C. §112, second paragraph, as allegedly "being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 2, 5, 22, 25, 32, 39 and 46, the term "adapted to" is unclear. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 *USPQ* 138. Correction is required.... Claims 3, 4, 23,24,33,40 and 48 are rejected because of dependency on the above rejected parent claims 2, 5, 22, 25, 32, 39 and 46."

In response, Applicants have amended claims 2, 5, 22, 25, 32, 39 and 46 to delete "adapted to".

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35 U.S.C. §103(a): Claims 1-7, 11-17, 21-27, 31-34, 37-41 and 45-48

The Examiner rejected claims 1-7, 11-17, 21-27, 31-34, 37-41 and 45-48 under 35 U.S.C. §103(a) as allegedly being unpatentable over Even et al. (US Patent 5,611,043).

Claims 1-7

Applicants respectfully contend that claim 1 is not unpatentable over Even, because Even does not teach or suggest each and every feature of claim 1. As a preliminary matter, the Examiner argues that it is obvious interpret the watchpoint in Even as representing the global breakpoint in claim 1. Accordingly, the following arguments by Applicants will initially present an analysis of why Even does not teach or suggest each and every feature of claim 1, wherein Applicants' initial analysis will not differentiate Even's watchpoint from the global breakpoint in claim 1. After said initial analysis, Applicants will present arguments as to why it is not obvious to interpret the watchpoint in Even as representing the global breakpoint in claim 1.

A first reason why Even does not teach or suggest each and every feature of claim 1 is that Even does not teach or suggest the feature: "inserting a global breakpoint in a page containing software code if said page is present in memory". The Examiner argues that "Even discloses inserting a software watchpoint in a page containing software code ("setting and clearing watchpoints," abstract) if said page is present in memory ("page frames in the physical memory," col 10 lines 40-51)".

In response, Applicants contend that the triggering condition "if said page is present in memory" for "inserting a software watchpoint in a page containing software code" is not

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disclosed in col. 10, lines 40-51 as alleged by the Examiner. Indeed, col. 10, lines 40-51 is part of a generic discussion of how a software system manages memory resources and has absolutely no relevance to "inserting a software watchpoint in a page containing software code". See Even, col. 10, lines 8-10 ("Before describing specific watchpointing techniques of the present invention, it is helpful to first review generally how a computer system manages memory resources."). Thus the Examiner has not presented evidence in Even to support the Examiner's contention that "inserting a software watchpoint in a page containing software code" is conditionally performed "if said page is present in memory". Accordingly, Applicants respectfully contend that the Examiner has failed to establish a *prima facie* case of obviousness in relation to claim 1.

A second reason why Even does not teach or suggest each and every feature of claim 1 is that Even does not teach or suggest the feature: "reading said page into memory if not present in memory, and inserting a global breakpoint in said page immediately after being read into memory". The Examiner argues that Even discloses "reading said page into memory if not present in memory ("a page table, with each entry in the table having a present/absent bit for indicating whether a particular page is mapped or not (i.e., present in physical memory)," col 10 lines 39-51), and inserting a global breakpoint in said page immediately after being read into memory ("examine the cause of the exception," col 11 lines 26-45; col 12 lines 47-62; col 10 lines 39-51)".

In response, Applicants contend that none of the preceding citations in Even by the Examiner support the Examiner's contention that Even discloses that the global breakpoint is

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inserted into said page immediately after said page has been read into memory. Col. 11, lines 26-45 of Even is totally silent about a page being read into memory. Col. 12, lines 47-62 of Even is likewise totally silent about a page being read into memory. Col. 10, lines 39-51 of Even is part of a generic discussion of how a software system manages memory resources and has absolutely no relevance to "inserting a global breakpoint in said page immediately after being read into memory". See Even, col. 10, lines 8-10 ("Before describing specific watchpointing techniques of the present invention, it is helpful to first review generally how a computer system manages memory resources."). Thus the Examiner has not presented evidence in Even to support the Examiner's contention that "inserting a global breakpoint in said page immediately after being read into memory" is disclosed by Even. Accordingly, Applicants respectfully contend that the Examiner has failed to establish a *prima facie* case of obviousness in relation to claim 1.

A third reason why Even does not teach or suggest each and every feature of claim 1 is that Even does not teach or suggest the feature: "detecting a private copy of said page if present, and inserting a global breakpoint in said private copy". The Examiner argues that Even discloses "detecting a private copy of said page if present ("swapping out pages,.. virtual pages are tracked in a page table," col 10 lines 39-52)".

In response, Applicants contend that col. 10, lines 39-52 of Even is part of a generic discussion of how a software system manages memory resources and has absolutely no relevance to "inserting a global breakpoint in said private copy". See Even, col. 10, lines 8-10 ("Before describing specific watchpointing techniques of the present invention, it is helpful to first review generally how a computer system manages memory resources."). Thus the Examiner has not

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presented evidence in Even to support the Examiner's contention that "inserting a global breakpoint in said private copy" is disclosed by Even. Accordingly, Applicants respectfully contend that the Examiner has failed to establish a *prima facie* case of obviousness in relation to claim 1.

Next, Applicants will present arguments as to why it is not obvious to interpret the watchpoint in Even as representing the global breakpoint in claim 1. The Examiner argues that "a global breakpoint was well known in the art of Software debugging, at the time applicant's invention was made, to stop the program execution to debug the program. Even does not explicitly teach the watchpoint can function as a breakpoint. A watchpoint disclosed in Even's system stops a program execution when the contents of a set point in the memory become altered. It would have been obvious of one skilled in the art to implement the software watching point as a breakpoint in the memory page by incrementing the content of a location each time the instruction is executed such that a watchpoint :stops the program execution in every cycle whether the memory contents become altered. The modification would be obvious because, by doing so, the watch point would have the same functionality of a breakpoint."

In response, Applicants respectfully contend that the Examiner has not presented any suggestion, motivation, or teaching **in the prior art** for modifying Even by replacing Even's watchpoint by a global breakpoint. See *Karsten Mfg. Corp. v. Cleveland Gulf Co.*, 242 F.3d 1376, 1385, 58 U.S.P.Q.2d 1286, 1293 (Fed. Cir. 2001) ("In holding an invention obvious in view of a combination of references, there must be some suggestion, motivation, or teaching in **the prior art** that would have led a person of ordinary skill in the art to select the references and

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combine them in the way that would produce the claimed invention." (emphasis added). Se also

C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, 48 U.S.P.Q.2d 1225, 1232 (Fed. Cir. 1998) (holding that a showing of a suggestion, teaching, or motivation to combine the prior art references is an "essential **evidentiary** component of an obviousness holding" (emphasis added).

Since the Examiner's alleged motivation for combining references originated from the Examiner and not from the prior art, Applicants maintain that the Examiner derived said motivation by hindsight reconstruction based primarily on knowledge of Applicants' disclosure. See *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991) ("Both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant's disclosure.").

In addition, the Examinier's idea of modifying Even by replacing Even's watchpoint by a global breakpoint would destory Even's invention. Even's invention is based on debugging software through the use of watchpoints. A watchpoint that functions as a global breakpoint is no longer a watchpoint, by definition. Thus, the Examiner's suggested modification would so devastatingly destroy Even's invention, that Even's invention would cease to exist.

Accordingly, Applicants respectfully contend that the Examiner has failed to establish a *prima facie* case of obviousness in relation to claim 1.

Based on the preceding arguments, Applicants respectfully maintain that claim 1 is not unpatentable over Even, and that claim 1 is in condition for allowance. Since claims 2-7 depend from claim 1, Applicants contend that claims 2-7 are likewise in condition for allowance.

Claims 11-17

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The Examiner states: "Per claims 11-17, they are apparatus versions of claims 1-7, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-7 above." In response for claims 11-17, Applicants refer to Applicants' arguments presented *supra* in relation to claims 1-7.

Claims 21-27

The Examiner states: "Per claims 11-17, they are product versions of claims 1-7, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-7 above." In response for claims 21-27, Applicants refer to Applicants' arguments presented *supra* in relation to claims 1-7.

Claims 31-37

The Examiner argues: "Even discloses: - removing a global breakpoint in a page containing software code ("Swapping out pages," col 10 lines 38-64) if said page containing said global breakpoint is present in memory ("page frames in the physical memory," col 10 lines 40-51) ... - detecting a private copy of said page if present("swapping out pages...virtual pages are tracked in a page table," col 10 lines 39-52), reading said page into memory if not present in memory("page frames in the physical memory," col 10 lines 40-51), and removing a global breakpoint in said private copy("Swapping out pages," col 10 lines 38-64).... See the rejection of claim 1 above. ".

In response, Applicants respectfully contend that Even does not teach or suggest the features: "removing a global breakpoint in a page containing software code if said page

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containing said global breakpoint is present in memory" and "detecting a private copy of said page if present, reading said page into memory if not present in memory, and removing a global breakpoint in said private copy".

With respect to the Examiner's reference to the Examiner's arguments in relation to claim 1, Applicants refer to Applicants' arguments presented *supra* in relation to claim 1.

With respect to the Examiner's reference to col. 10, lines 38-64, Applicants contend that col. 10, lines 38-64 is part of a generic discussion of how a software system manages memory resources and has absolutely no relevance to "removing a global breakpoint in a page containing software code if said page containing said global breakpoint is present in memory" and "detecting a private copy of said page if present, reading said page into memory if not present in memory, and removing a global breakpoint in said private copy". See Even, col. 10, lines 8-10 ("Before describing specific watchpointing techniques of the present invention, it is helpful to first review generally how a computer system manages memory resources."). Thus the Examiner has not presented evidence in Even to support the Examiner's contention that Even discloses the preceding features of claim 31. Accordingly, Applicants respectfully contend that the Examiner has failed to establish a *prima facie* case of obviousness in relation to claim 31.

Based on the preceding arguments, Applicants respectfully maintain that claim 31 is not unpatentable over Even, and that claim 31 is in condition for allowance. Since claims 32-37 depend from claim 1, Applicants contend that claims 32-37 are likewise in condition for allowance.

Claims 38-41

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The Examiner states: "Per claims 37-41, they are apparatus versions of claims 31-34, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 31-34 above." In response for claims 37-41, Applicants refer to Applicants' arguments presented *supra* in relation to claims 31-34.

Claims 45-48

The Examiner states: "Per claims 45-48, they are product versions of claims 31-34, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 31-34 above." In response for claims 45-48 , Applicants refer to Applicants' arguments presented *supra* in relation to claims 31-34.

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35 U.S.C. §103(a): Claims 8-10, 18-20, 28-30, 35-36, 42-44 and 49-51

The Examiner rejected claims 8-10, 18-20, 28-30, 35-36, 42-44 and 49-51 under 35 U.S.C. §103(a) as being unpatentable over Even et al. (US Patent 5,611,043) in view of Jenevein et al. (US Patent 6,615,365).

Claims 8-10

The Examiner states: "The rejection of claim 1 is incorporated, and further, Even does not explicitly discloses an identifier of a file and an offset in said file. However, Jenevein teaches that a file identifier and a file offset were known in the art of software debugging and development, at the time applicant's invention was made, to represent a file ("offset from beginning of file," col 10 lines 22-65; the file IQ," col 11 lines 1-15} such as those disclosed in Jenevein. It would have been obvious for one of ordinary skull in the art of computer software development and debugging to modify Even's disclosed system to use a file identifier and offset. The modification would be obvious because one of ordinary skill in the art would be motivated to use a file identifier to easily identify each file (col 14 lines 50-67).

In response, Applicants respectfully contend that Even does not teach or suggest the feature: "identifying said global breakpoint using an identifier of a file and an offset in said file".

With respect to the Examiner's reference to the Examiner's arguments in relation to claim 1, Applicants refer to Applicants' arguments presented *supra* in relation to claim 1. Additionally, since claim 8 depends from claim 1 which Applicants have argued *supra* to be not unpatentable under 35 U.S.C. §103(a), Applicants contend that claim 8 is likewise not unpatentable under 35 U.S.C. §103(a).

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With respect to the Examiner's argument for modifying Even with the alleged teaching of Jenevein, Applicants respectfully maintain that the Examiner's argument that it would be obvious "to use a file identifier to easily identify each file" is irrelevant to claim 8, since claim 8 recites using a file identifier to identify a global breakpoint, which the Examiner has not addressed.

Based on the preceding arguments, Applicants respectfully maintain that claim 8 is not unpatentable over Even, and that claim 8 is in condition for allowance. Since claims 9-10 depend from claim 8, Applicants contend that claims 9-10 are likewise in condition for allowance.

Claims 18-20

The Examiner states: "Per claims 18-20, the rejection of claim 11 is incorporated, further, they are apparatus versions of claims 8-10, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 8-10 above." In response for claims 18-20 , Applicants refer to Applicants' arguments presented *supra* in relation to claims 11 and 8-10.

Claims 28-30

The Examiner states: "Per claims 28-30, the rejection of claim 21 is incorporated, further, they are apparatus versions of claims 8-10, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 8-10 above." In response for claims 28-30, Applicants refer to Applicants' arguments presented *supra* in relation to claims 21 and 8-10.

Claims 35-37

The Examiner states: "Per claims 35-37, the rejection of claim 31 is incorporated, further, see the rejection of claims 8-10 above." In response for claims 35-37, Applicants refer to Applicants' arguments presented *supra* in relation to claims 31 and 8-10.

Claims 42-44

The Examiner states: "Per claims 42-44, the rejection of claim 38 is incorporated, further, they are apparatus versions of claims 35-37, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 35-37 above." In response for claims 42-44, Applicants refer to Applicants' arguments presented *supra* in relation to claims 38 and 35-37.

Claims 49-51

The Examiner states: "Per claims 49-51, the rejection of claim 45 is incorporated, further, they are apparatus versions of claims 35-37, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 35-37 above." In response for claims 49-51, Applicants refer to Applicants' arguments presented *supra* in relation to claims 45 and 35-37.

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CONCLUSION

Based on the preceding arguments, Applicants respectfully believe that all pending claims and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invites the Examiner to contact Applicants' representative at the telephone number listed below.

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